

ALENA PIRUTKA

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POSITIONS

Courant Institute, NYU, Associate Professor, from September 2017
Courant Institute, NYU, Assistant Professor, 2015-2017
CNRS, Chargé de Recherche, 2012-2015 (at IRMA, Strasbourg University, 2012-2013, and at CMLS
École Polytechnique, Paris, from September 2013)
IRMA, Strasbourg University, postdoctoral fellow, 2011-2012

EDUCATION

Habilitation

Université Paris-Sud, Orsay, December 2016
Title : "Invariants birationnels, cycles algébriques et rationalité."

Ph.D. in Mathematics

Université Paris-Sud, Orsay, October 2011
Dissertation topic: "Deux contributions à l'arithmétique des variétés : R-équivalence et cohomologie non ramifiée."
Adviser: Jean-Louis Colliot-Thélène

Master in Mathematics, "Algebra and Geometry"

Université Paris 6, 2008
Master thesis: "Cycles évanescents sur des schémas formels."
Adviser: Joseph Ayoub

Mathematics, undergraduate

École Normale Supérieure, Paris, undergraduate fellowship "Sélection Internationale", 2005-2008

Applied Mathematics and Computer Science

Belarusian State University, Minsk, 2002-2005

GRANTS AND FELLOWSHIPS

National Science Foundation Grant 1601680: March, 1, 2016 - February, 28, 2019; Cohomological and birational invariants of algebraic varieties (PI)

HONORS AND AWARDS

International Mathematics Competitions for University Students 2004, 2005 and 2006 (Second Prize, First Prize and Second Prize)
International Mathematical Olympiad 2002, Bronze medalist

PUBLICATIONS

1. *Cohomologie non ramifiée en degré trois d'une variété de Severi-Brauer*, C. R. Acad. Sci. Paris, Ser. I **349** (2011), 369–373.
2. *R-équivalence sur les familles de variétés rationnelles et méthode de la descente*, J. de Théorie des Nombres de Bordeaux **24**, no. 2, (2012), 461–473.
3. *Sur le groupe de Chow de codimension deux des variétés sur les corps finis*, Algebra and Number Theory **5-6** (2011), 803–817.
4. *R-equivalence on low degree complete intersections*, J. of Algebraic Geom. **21** (2012), 707–719.
5. *Invariants birationnels dans la suite spectrale de Bloch-Ogus*, J. of K-theory **10** (2012), 565–582.
6. *A bound to kill the ramification over function fields*, J. Algebra **377** (2013), 173–178.
7. *Sur la cohomologie non ramifiée en degré trois d'un produit*, Bulletin de la SMF **144**, 1 (2016), 53–75.
8. (with F. Charles), *La conjecture de Tate entière pour les cubiques de dimension quatre sur un corps fini*, Compositio Mathematica **151**, no. 2, (2015), 253–264.
9. (with N. Yagita), *Note on the counterexamples for the integral Tate conjecture over finite fields*, Documenta Math. Extra Volume: Alexander S. Merkurjev's Sixtieth Birthday, (2015), 501–511.
10. *On a local-global principle for H^3 of function fields of surfaces over a finite field*, (2013), to appear in “Brauer groups and obstruction problems: moduli spaces and arithmetic”, (Palo Alto, 2013).
11. (with J.-L. Colliot-Thélène), *Hypersurfaces quartiques de dimension 3 : non rationalité stable*, Ann. Sci. Ecole Norm. Sup. (2) **49** (2016) 371–397.
12. (with J.-L. Colliot-Thélène), *Cyclic covers that are not stably rational*, (2015), Izvestiya RAN, Ser. Mat. **80**, 4 (2016), 35–47.
13. (with F. Bogomolov and A. Silberstein), *Families of disjoint divisors on varieties*, (2015), European Journal of Mathematics, available online.
14. *Varieties that are not stably rational, zero-cycles and unramified cohomology*, arXiv:1603.09261, to appear in the proceedings of the AMS Algebraic Geometry Summer Institute, SLC 2015.
15. (with B. Hassett and Y. Tschinkel), *Stable rationality of quadric surface bundles over surfaces*, to appear in Acta Mathematica.
16. (with B. Hassett and Y. Tschinkel), *A very general quartic double fourfold is not stably rational*, to appear in Algebraic Geometry.
17. (with A. Auel, C. Böhning and H-C. von Bothmer), *Conic bundles over rational threefolds with nontrivial unramified Brauer group*, arXiv:1610.04995, to appear in European Journal of Mathematics.

PREPRINTS

1. (with B. Hassett and Y. Tschinkel) *Intersections of three quadrics in P^7* , arXiv:1706.01371.
2. (with J.-L. Colliot-Thélène) *Troisième groupe de cohomologie non ramifiée d'un solide cubique sur un corps de fonctions d'une variable*, arXiv:1709.00597.
3. (with A. Auel and C. Böhning), *Stable rationality of quadric and cubic surface bundle fourfolds*, arXiv:1710.07270.
4. (with A. Cadoret) *Reconstructing function fields from Milnor K-theory*, in preparation.

SEMINAR AND CONFERENCE TALKS

Algebraic Geometry Seminar, University of Wisconsin-Madison, April 2018
Conference on Birational Geometry, Simons Foundation, New York, August 2017
Inaugural conference for Laboratory of Mirror Symmetry and Automorphic forms, Moscow, HSE, June 2017
Emory Conference on Higher Obstructions to Rational Points, Emory University, Atlanta, May 2017
Conference on Geometry and Topology, In Celebration of the 50th Anniversary of the Journal of Differential Geometry, Harvard University, April-May 2017
Yale Algebraic and Tropical Geometry seminar, Yale University, April 2017
Algebra Seminar, University of Pennsylvania, Philadelphia, April, 2017.
Algebro-Geometric and Homotopical Methods, Research Program, Institut Mittag-Leffler, Stockholm, February 2017
ANR Gatho Conference, IHP Paris, December 2016
Columbia University, New York, Algebraic geometry seminar, December 2016
University of Illinois, Chicago, Algebraic geometry seminar, November 2016
Stony brook University, Stony brook, Algebraic geometry seminar, October 2016
University of Michigan, Michigan, Algebraic geometry seminar, October 2016
Northeastern University, Boston, Algebraic geometry seminar, October 2016
Washington University, Saint Louis, Colloquim, September 2016
Levico terme, Geometria delle Varietà Algebriche, June 2016
Edinburgh, Edge Days, June 2016
Simons symposium "Geometry over non-closed fields", Ellmau, April 2016
Yale University, AGNES meeting, April 2016
Rice University, Algebraic Geometry seminar, March 2016
Jussieu, Paris, "Autour des cycles algébriques", December 2015
Brown University, Algebraic Geometry seminar, November 2015
Emory University, Atlanta, GAGS meeting, October 2015
University of Washington, WAGS meeting, October 2015
CIRM, Luminy, Méthodes cohomologiques dans la théorie des groupes algébriques, September 2015
Salt Lake City, AMS Summer Institute in Algebraic Geometry, July 2015
Saint Petersburg, Arithmetic geometry, Chow groups and rational points, June 2015
CIRM, Luminy, Arithmétique, Géométrie, Cryptographie et Théorie des Codes, May 2015
Stony Brook University, New Techniques in Birational Geometry, April 2015
University of Chicago, Algebraic Geometry seminar, April 2015
Simons symposium "Geometry over non-closed fields", Puerto Rico, April 2015
Arizona Winter School, Exercise sessions, March 2015
Princeton, IAS, Chow groups, motives and derived categories, March 2015
Université Paris-Sud, Orsay, SAGA seminar, December 2014
Essen, Germany, Algebraic Geometry seminar, November 2014
Harvard, Cambridge, Number Theory seminar, October 2014
MIT, Cambridge, Algebraic Geometry seminar, October 2014
University of Pennsylvania, Galois seminar, October 2014
Yale University, Algebra and Lie Groups seminar, October 2014
CUNY, New York, New York Joint Number Theory Seminar, October 2014
Courant Institute, New York, Algebraic Geometry seminar, October 2014
Mainz University, conference "Around forms, cycles and motives", September 2014
Tel Aviv, Israel, AMS meeting speaker, June 2014
Lausanne, EPFL, Algebraic Geometry seminar, April 2014
Jussieu, Paris, seminar "Autour des cycles algébriques", April 2014
Université d'Artois, Lens, March 2014
Université de Rennes 1, Algebraic Geometry seminar, February 2014
Göttingen University, postdoc seminar, November 2013
Lyon, seminar "Arithmétique", October 2013
Moscow, conference "Global Fields", September 2013

Oberwolfach, workshop “Algebraic K -theory and Motivic Cohomology”, June 2013
Fields Institute, Toronto, “Spring school and workshop on Torsors, Motives and Cohomological Invariants”, May 2013
Université Paris 7, seminar “Autour des cycles algébriques”, April 2013
IHP, Paris, seminar “Variétés rationnelles”, April 2013
Universität Zürich, Algebraic Geometry seminar, April 2013
Mainz University, “SFB seminar”, January 2013
Lausanne, Number Theory seminar, December 2012
Grenoble, “Points entiers, points rationnels”, October 2012
Strasbourg, Algebraic Geometry seminar, September 2012
University of Heidelberg, seminar “Algebra und Zahlentheorie”, June 2012
IMJ, Paris, Number Theory seminar, May 2012
Université Versailles, seminar “Algèbre et Géométrie”, March 2012
Universität Zürich, Symposium, February 2012
Université Rennes 1, Algebraic Geometry seminar, February 2012
Université Bordeaux 1, Number Theory seminar, February 2012
Institut Fourier, Grenoble, Number Theory seminar, February 2012
IRMA Strasbourg, Freiburg-Nancy-Strasbourg joint seminar in Algebraic and Complex Geometry, January 2012
Tokyo, Graduate School of Mathematics, University of Tokyo, International Workshop on motives, December 2011
London, Imperial College, Number Theory seminar, November 2011
Besançon, Université de Franche-Comté, Algebra and Number Theory seminar, October 2011
Besançon, Université de Franche-Comté, seminar “doctorant”, October 2011
CIRM Luminy, workshop “Géométrie arithmétique et motivique”, September 2011
ENS Paris, seminar “Variétés rationnelles”, title: “Invariants birationnels dans la suite spectrale de Bloch-Ogus”, June 2011
Tübingen, seminar “Algebraische Geometrie”, May 2011
Atlanta, Georgia, USA, conference “Ramification in Algebra and Geometry”, May 2011
IRMA Strasbourg, “Géométrie algébrique et arithmétique : nouvelles tendances”, March 2011
Université Lille 1, seminar “Théorie de Galois et méthodes explicites”, November 2010
Université Paris 6, seminar “doctorant”, April 2010
Université Lille 1, seminar “Arithmétique”, March 2010
ETH Zürich, seminar “Arithmetic and Geometry”, September 2009
ENS Paris, seminar “Variétés rationnelles”, title: “ R -équivalence sur les intersections complètes”, September 2009

LECTURE SERIES, SEMINARS AND CONFERENCES ORGANIZED

1. AIM workshop *Rationality problems in Algebraic Geometry*, (July 2019, with A. Perry and S. Schreieder).
2. Reading group *Anabelian geometry*, Courant Institute (January 2018 to March 2018, with A. Cadoret).
3. *Conference on Algebraic Geometry and Number Theory*, Florence (December 2017, with O. Wittenberg).
4. *Conference on Birational Geometry*, Simons Foundation, New York (August 2017, with I. Cheltsov and Y. Tschinkel).
5. Algebraic Geometry Seminar, Courant Institute (from September 2017).
6. Thematic program *Advances in Birational Geometry*, ESI, Vienna, (April-May 2017, with F. Bogomolov, J.-L. Colliot-Thélène, L. Katzarkov, A. Kuznetsov, Y. Tschinkel).
7. Lecture series, *Irrationality problems*, ESI, Vienna (April 2017).

8. Lecture series *Stable rationality*, GAGC, Luminy (January 2017).
9. Conference *Arithmetic Algebraic Geometry*, Courant Institute NYU, (August 2016, with Y. Tschinkel and D. Zakharov)
10. Lecture series *Stable rationality questions*, Liverpool (June 2015)
11. Lecture series *Diagonal Arithmetics*, IMPA, Rio de Janeiro (May 2015)
12. Seminar *Algebraic cycles*, Jussieu and Paris 7, (from September 2013, with B. Kahn and B. Klingler)
13. Conference *Global fields*, Moscow, (September 2013, with M. Hindry, Ph. Lebacque, M. A. Tsfasman, A. Zykin)
14. Students seminar *Quadratic forms*, Zürich University (February-March 2013)
15. Working group *p-adic deformations of algebraic cycle classes, after S. Bloch, H. Esnault et M. Kerz*, École Polytechnique, (2012, with A. Cadoret)
16. Working group *Rational connectedness, log pairs and stacks*, IRMA, Strasbourg University (2012-2013, with C. Gasbarri and G. Pacienza)
17. Seminar *Arithmetic geometry*, Strasbourg (2012-2013, with Ch. Huyghe)
18. Lecture series *Algebraic and geometric aspects of rationality and unirationality questions*, Yaroslavl summer school (July 2012)
19. Lecture series *Moduli spaces of rational curves and R-equivalence*, Grenoble summer school “Aspects arithmétiques des courbes rationnelles” (June 2010)
20. Working group *Zero-cycles on algebraic varieties over p-adic fields, after Saito and Sato*, École Normale Supérieure, (Paris 2010, with F. Charles and O. Wittenberg)
21. Undergraduate thesis adviser, École Normale Supérieure 2010, title: “Théorème de Roth”
22. Mathematics for non-specialists, École Normale Supérieure, Paris (2008-2010)

TEACHING

Courant Institute, 2015-present
 École Polytechnique, Paris, 2013-2017.

LANGUAGES

English (fluent), French (fluent), Russian/Belarusian (native speaker)